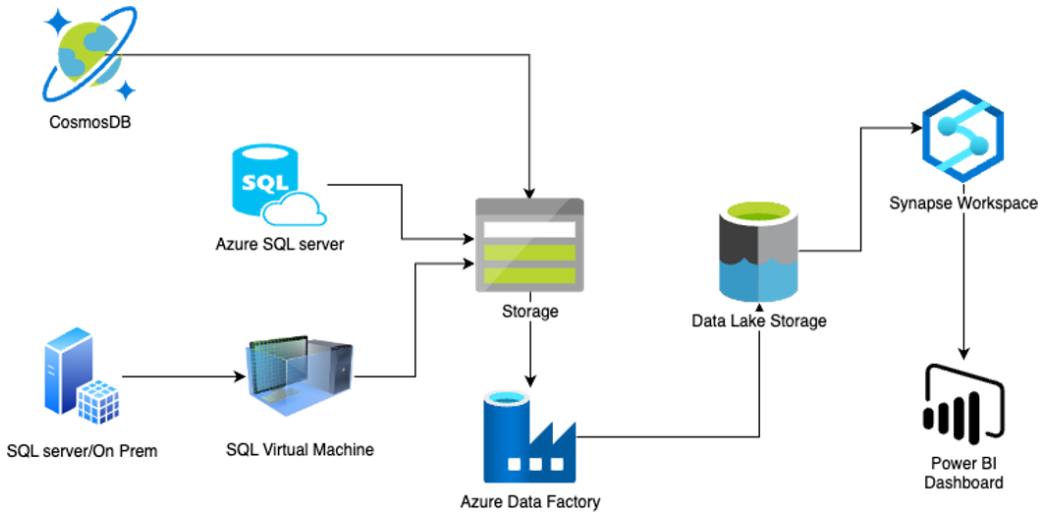
Team 6 Report



Our data architecture diagram illustrates our process of storing and loading our data within Microsoft Azure. Data from various sources, including CosmosDB, SQL server on-premises, and Azure SQL server, was ingested and processed through Azure Data Factory. The processed data was stored in either a general storage or a Data Lake Storage Account. Synapse Workspace is used for analytics and Power BI Dashboard is for visualizing the analytical results.

Our assigned metrics were a public information campaign (no campaign) and workplace closures (closures implemented). However, based on our common knowledge of COVID-19, we believe vaccination policies and mask mandates would be the most effective in reducing cases and deaths. We were not able to definitively support this conclusion since the spread of COVID is influenced by so many factors, some of which are not represented in our data. In general, gauging the effectiveness of individual policies is difficult and arbitrary, and we can at best provide correlations, which may or may not indicate causation.

Due to a lack of data indicating otherwise, we believe that public information campaigns can be beneficial provided they are implemented quickly and clearly. However, the effectiveness of such campaigns is difficult to verify, since every country we analyzed data for implemented public information campaigns for the entirety of the pandemic. Therefore, we had limited ability to compare the effectiveness of countries that did or did not implement this policy.

Secondly, it seems that for some countries, removing their workplace closure policy after experiencing low COVID rates did not significantly impact COVID rates. For example, New Zealand and Japan had relatively low COVID rates and removed their workplace policy after a few months. This decision was associated with lower COVID rates than Great Britain and Canada. Thus, if Calagan has a small rate of infection relative to its population, closing workplaces may not be necessary. It is worth noting that countries like Japan and New Zealand are island nations with relatively strict border controls that helped keep the initial rates low.

That being said, some evidence suggests that implementing strict workplace closures can have short-term reductions in the acceleration of growth in cases. In Sweden, elevating the policy from level 2 to 3 resulted in a change in the growth rate going from approximately 150 cases/day to zero, plateauing the daily change in cases. In the UK, it reduced the derivative of the case growth rate from roughly 2000 cases/day^2 to only 1000. Each of these events displayed shallower changes in their growth rates for a week, where the growth rate resumed a steep ascent. While these implementations of workplace closure policies saw effects on growth, most other examples of mandatory closures did not manifest significant changes.

To conclude, while it is unlikely, there is evidence from the data to suggest that increasing workplace restrictions during times of rapid increase in the growth in cases may result in temporary plateauing of the growth of cases. On the contrary, there is insufficient evidence to suggest a significant impact of public information campaigns on case growth rates due to a lack of data covering a lack of campaigns. Nevertheless, we recommend that Caladan follows the example of the countries analyzed and implements coordinated public information campaigns.